



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.



Published to advance the Science of cold-blooded vertebrates

THE EGG CARRYING HABIT OF ARAWANA OF THE AMAZON

Arawana or arawona, *Osteoglossum bicirrhosum* Vandelli, was captured by me in a small lagoon near Santerem on the Amazon River during the dry season of December, 1909. One specimen had a few large eggs containing large embryos, in the bag or pouch-like space between the bones of the lower jaw. The natives claim that all the arawana carry eggs in their mouths to incubate them, etc. The specimen and eggs are in the Carnegie Museum of Pittsburgh, Pa.

J. D. HASEMAN,
Linton, Indiana.

FURTHER NOTES ON THE COTTOID FISHES OF THE GREAT LAKES

The writer has lately accumulated some further data on the status and distribution of the cottoid fishes of the Great Lakes, which supplement his paper, *Nomenclatural Notes on the Cottoid Fishes of Michigan*¹.

1. *Cottus bairdii* Girard.

The record of *Cottus ictalops* from Georgian Bay, by Bensley², and of *Uranidea Richardsoni* from New Brunswick, by Cox³, presumably were based on

¹Occ. Pap. Mus. Zool., Univ. Mich., No. 65, 1919, pp. 1-9.

²Contr. Can. Biol., 1911-1914 (1915), p. 49.

³Cox, Bull. Nat. Hist. Soc., New Brunswick, No. 13, 1896, p. 48.

specimens of this species, the northern representative of *Cottus meridionalis*. At both of these localities, as elsewhere in the range of the species, *Cottus bairdii* is associated with *Cottus gracilis*, or its Great Lakes representative, *Cottus franklinii*.

2. *Cottus franklinii* Girard.

Cooper⁴ has recorded a cottoid fish from Lake Ontario, at Port Credit, Ontario, under the name of *Uranidea formosa*, as the host of the cestode parasite, *Schistocephalus solidus*. Like the type of *Cottus formosus* Girard⁵ described from the same lake, the specimens were taken from the stomach of a ling (*Lota maculosa*). The original description of the partially digested type of *Cottus formosus* contains little that is tangible; the small size of the head there mentioned, presumed by Jordan & Evermann to be diagnostic of the species, can scarcely be considered significant, as the fore part of the head of the type was destroyed. Unless contrary evidence is forthcoming, the specimens recorded by Cooper may be regarded as topotypic of *Cottus formosus*. As these specimens, which Dr. Cooper has kindly presented to the Field Museum, are referable to *Cottus franklinii*, *Cottus formosus* Girard may be added to the synonymy of that species.

Cottus franklinii is thus known from Lakes Superior, Michigan, Huron⁶ and Ontario. The record of *Uranidea formosa* from Madawaska River, New Brunswick, by Cox (*l. c.*, p. 49) was probably based on a specimen of *Cottus gracilis*.

3. *Cottus ricei* (Nelson).

Another specimen of this deep-water species, which has been rarely reported, was found on the shore of Lake Michigan, near Winnetka, Illinois, where it

⁴Illinois Biol. Monog., 4, 1918, p. 321.

⁵Smiths. Contr. Knowl., 3, 1851, p. 58.

⁶The writer in his previous paper overlooked Bensley's record of *Uranidea franklini* from Georgian Bay (Contr. Can. Biol., 1911-1914 (1915), p. 49, fig. 6).

had been driven with numerous other fishes by a storm, on July 8, 1919.

Prickles absent; dorsal rays, VIII, 17; anal rays, 14; pectoral rays, 16; depth, about 6.8; head, 3.6; eye, 4.7; upper jaw, 3.3; length of preopercular spine from angle of ridge into eye, 1.2; length to caudal base, 89 mm.

CARL L. HUBBS,
Chicago, Ill.

OBSERVATIONS ON THE HIBERNATION OF THE BOX TURTLE

On December 2, 1917, while setting a line of mouse traps on the property of the Washington Biologists' Field Club at Plummers Island, Maryland, my attention was attracted by a small opening in the ground partly covered by fallen leaves. On lifting aside the rubbish to afford a better view I found that this hole formed the entrance of a small cavity in which a box turtle (*Terrapene carolina carolina* [Linn.]) had begun hibernation for the winter. The opening had been made within a few days, as the earth about it was still loose and crumbling. Apparently the turtle had worked its way into the humus until its shell was covered and then had turned so that its side was presented to the opening. The sides of the entrance hole were somewhat broken, but the opening was still about three inches broad and two inches high. Above the turtle was covered by two and one-half inches of earth, while one hind-foot and the posterior half of the left side were exposed at the entrance within two inches of the surface. The rest of the animal was covered closely by the loose earth surrounding it. The site chosen for hibernation was near the border of an open deciduous woods, on a gently inclined southern slope.

The location was marked and observations were made upon this turtle at intervals during the follow-